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AND
ADVOCATE OF INTERNAL IMPROVEMENTS.

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 } PROPRIETORS.]

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, MARCH 10, 1838.

AN APPENDIX

To the Report of the Committee on Railroads, on the petition of the New-York and Erie Railroad Company.

MR. JOHNSON'S REPORT.

(Concluded from p. 632.)

Having, it is believed, dwelt sufficiently upon the character of railways, as a general means of transit, I will next proceed to notice, in a cursory manner, the leading features of the several lines which are projected from the city of New-York, to the St. Lawrence and Mississippi valleys.

There exists, probably, no point upon the Atlantic seaboard of the United States, in all respects so favorably situated for a great national emporium of commerce, as the city of New-York. It possesses a spacious and secure harbor, accessible at all seasons, communicating with the sea by three channels, two of which have sufficient depth of water to float the larger class of vessels employed in commerce, and is connected with the great basin, or valley, of the St. Lawrence, by a chain of natural or artificial navigation which cannot be excelled by similar communications proceeding from any other point on the seaboard. It is, therefore, so far as those channels are concerned, the point to which the trade of a very great portion of the St. Lawrence and adjacent portions of the Mississippi valleys will be directed.

In addition to this, it is before all others, the point on the seaboard for the concentration and distribution of the trade of the New-England States with the west and south, which, if it does not exceed, equals probably, at the present time in value and importance, the whole European trade with New-York.

In respect to the trade of the Missis-

sippi valley, the local position of New-York city, if not fully equal is but little inferior to other points on the seaboard; with however, the advantages it possesses from the peculiarity of its position as above described, together with the precedence it has already acquired in the trade and business of the country, there can be little doubt that with proper precautions and a liberal spirit of enterprise in respect to public improvements, it will preserve its ascendancy and continue as heretofore, notwithstanding the strenuous exertions which are making to divert business in other directions, to be the leading commercial emporium of the United States.

In this view, the city of New-York may justly be considered as a point from which it is required that continuous lines of railway should emanate, extending to prominent points on the navigable waters of the St. Lawrence and Mississippi. These points are Whitehall on Lake Champlain; Oswego, Rochester, &c., on Lake Ontario; Buffalo, Dunkirk and Erie on Lake Erie; and Beaver, at the mouth of the Great Beaver on the Ohio river. This latter place is situated 26 miles below Pittsburgh, within the State of Pennsylvania. It is selected in preference to the former place, because it is the one to which the several lines which are brought into the comparison, will most conveniently and naturally converge, and because, also, it possesses some advantage in the navigation of the Ohio river, as indicated by the proposed extension to it of the Pennsylvania canal.

In the table below, are inserted the distances, with the average rise and fall per mile, of the several routes connecting New-York with the points referred to, with the exception of those leading to Lakes Champlain and Ontario, which as they are not so important to the present object, are omitted.

NAME OF ROUTE.	Distance in miles.	Average rise and fall in ft. per mile.
New-York to Buffalo via N.Y. & E. R. R. to Angelica, &c.	464	17.1
New-York to Buffalo, via W. Stockbridge, Albany, &c.	483	10.
Do. do. Goshen, Catskill, Canajoharie, &c.	460	15.9

New-York to Dunkirk, via N.Y. & E. R. Road	483	17.4
Do. do. Goshen, Catskill, Canajoharie, &c.	500	14.7
New-York to Dunkirk, via W. Stockbridge, Albany, &c.	523	10.
Do. Erie, Pa. via N.Y. & E. R. R. to Dunkirk,	533	15.7
Do. do. Philadelphia, Columbia and Sunbury, &c.	610	8.7
New-York to Erie, via Philadelphia, Pottsville, and Sunbury, &c.,	605	10.
New-York to Beaver, via N. Y. & E. R. R. to Olean, Franklin, &c.	608	13.3
New-York to Beaver, via Philadelphia, Columbia, Sunbury, &c.	592	9.33
New-York to Beaver, via Philadelphia, Columbia, Juniata valley, &c.	525	11.03
New-York to Beaver, via Philadelphia, Columbia, Gettysburgh, and B. & O. R. R.	505	18.
New-York to Beaver, via Baltimore and B. & O. R. R.	530	13.0

The distances and rise and fall per mile given in the table, are in most cases derived from authentic surveys. In some few instances, however, they are approximations from the best evidence that could be obtained. They are nevertheless, believed to be near the truth. The average rise and fall is derived from the main features only of each route, and does not therefore include the minor inequalities in the grades. This average, as already explained, does not afford conclusive evidence of the relative merits of the several routes in respect to cost of conducting the transportation upon them, but is given merely as an indication of their general character.

It will be observed by an inspection of the table, that there is, with the exception of the route via Catskill and Canajoharie to Buffalo, a saving in distance by the New-York and Erie Railroad, to the several places mentioned on Lake Erie.

From New-York to Buffalo, the distance is less than by the way of Albany to the same point, 19 miles, while the

average rise and fall exceeds 7 feet per mile. This difference of rise and fall in favor of the Albany route may be considered as in a measure counterbalanced by the saving in the cost of transportation, resulting from the shortening of the distance and the advantage which an extended line of road, managed by one, or at most two companies, possesses over a similar line, controlled by eight or ten different incorporations, each of which, if a separate organization is maintained, must incur the extra expense of a greater number of engines, carriages, ware houses, machine-shops, agents, &c. with occasional delays and expense of transfer of freight.

Longer lines possess, also, some advantage over a series of shorter ones, which in the aggregate have a like extent, in the economy and efficiency with which the transportation can be conducted, arising out of the inequality in the business upon the latter, compelling such as are less favourably situated, in consequence of being farther removed from the central points of business, or other causes, to labor under the disadvantage of conducting their business with less profit, and with a more limited means of infusing energy and punctuality into their operations. The saving, likewise, in expense of repairs and maintenance of way, resulting from the shortening of the distance on the line of the New York and Erie road, and the comparative cheapness of timber in that section, as also of fuel for the engines, which, whether it be wood or bituminous or anthracite coal, will be obtained at a much lower rate in the southern than in the more northern sections of the State.

These remarks will apply with nearly equal force to connexions with other prominent points in the western part of New York, as well as to Buffalo. They apply, also, in like manner, but with greater force, to the extension of the main line to Dunkirk. The distance of this latter point from New York city, by the route of the New York and Erie Railroad, is 40 miles less than by the way of Albany, and does not exceed the distance by the latter route to Buffalo.

In addition to the considerations mentioned above, by which an advantage to a certain extent is anticipated in the cost of transportation, it is believed that the line from the Hudson river to Lake Erie, on the route of the New York and Erie Railroad, will cost less in proportion to its length, than the line from New York by the way of Albany.

The reasons for this belief are the following:

1. Being under the direction of one company instead of nine, (the number of incorporations by the way of Albany) the cost will be less in proportion for engineering, superintendence, salaries of officers, &c.

2. Upon so much of the line via Albany as is already constructed, the cost of land, for road way and depot grounds,

and farm and turnpike damages, &c. will not probably average less than \$2,500 to \$3,000 per mile; and there is no sufficient reason to suppose, unless a radical change shall be effected in the mode of making the appraisements, that the average of the whole distance when completed, will be less than from \$1,500 to \$2,000 per mile. The land upon the route of the New York and Erie road, in the majority of cases, with the exception of a portion of the line in the vicinity of the Hudson river, will either cost nothing, or the assessments will be light, owing to the sequestered position of that section of the country, and the great benefit anticipated from the opening of a direct communication to market.

3. The donations of land to the New York and Erie Railroad company, to aid in the construction of their road, independent of what is required for road-way and depot grounds, are larger, and when appropriated as intended, will serve to diminish materially the expense of the road to the stockholders. Upon the line via Albany to Buffalo, donations of land, even for the road-way, have thus far been comparatively rare, and no great assistance has been rendered, or can be anticipated in the way of donations, to aid in the construction of the road.

4. The cost of fencing, which is an important item, amounting to not less, usually, than \$800 to \$1,000 per mile, (if the cost of construction and capital required for maintenance is considered) will be much less upon the New York and Erie road.

5. The cost of timber for the superstructure or rail-track, and for bridges, &c., will be less. The line of the New York and Erie road passes for much of the distance through a timber region, being the same region from whence is derived a portion of the timber for constructing the line of Railway via Albany to Buffalo.

In respect to physical obstacles, or those growing out of the topographical features of the country, I am not aware that the route of the New York and Erie Railroad, under a judicious location, presents, with the exception of the passage of the Shawangunk ridge, and a portion of the line on the Delaware, any more points of difficulty or of excessive expense, in proportion to its length, than are encountered upon the line by the way of Albany to Buffalo. In the matter of business, the termination at Dunkirk possesses some advantage over that at Buffalo, in the earlier disappearance of the ice in the lake at that point, and opening of the navigation in the spring, and being forty miles farther west, is more favorably situated for accommodating the western travel.

The comparison with the line by the way of Albany, is not made with a view to detract, in the least, from the very great importance of that route as a medium of communication with the north

and west. The very favorable position which it occupies, must ensure to it a liberal support, enabling it to maintain, against all opposition, a high rank in the great leading thoroughfares of the country. It is referred to solely for the purpose of exhibiting some of the leading traits of difference between it and the New York and Erie road, with the view of removing any erroneous impressions which may still exist in respect to the practicability of the latter work.

Comparing the line of the New-York and Erie railroad with other routes on the south, and the one which appears to come more directly in competition with it for the Lake Erie trade, is that by the way of Philadelphia, Sunbury, and the west branch of the Susquehanna, to the port of Erie, on Lake Erie. The distance from Philadelphia via Columbia to Erie, by this route, as deduced from the State surveys for the West Branch canal, (there having, as yet, been no survey made for a railway) is 523 miles, and from New-York, 610 miles, from which 5 miles should be deducted, if the route via Pottsville is taken.

The rise and fall is comparatively moderate, averaging for the whole distance from New-York, 8.7 feet per mile, via Columbia; and 10 feet via Pottsville; 8.7 feet, and 7.4 feet less than the New-York and Erie road to Dunkirk.

The increase of distance to Lake Erie (127 miles) by these lines, and the circumstance of their being under the control of several different incorporations, renders it improbable that they can be brought into successful competition with the New-York and Erie road. The port of Erie, it is true, possesses an advantage over that of Dunkirk, in the superiority of its harbor, not sufficient, however, to counterbalance the great superiority possessed by New-York over Philadelphia, as a commercial mart.

As it respects the trade of the Ohio valley, the route via Philadelphia and the Juniata valley terminating at Beaver, possesses an advantage in distance, and in the average rise and fall over the New-York and Erie route. The distance, 523 miles, given in the table, exceeds, by 18 miles, the present travelled distance on that route. This 18 miles is the amount to which the line would be lengthened agreeably to a recent survey, supposing the inclined planes upon the Portage railroad to be dispensed with, and grades suited to locomotive power of 44 feet per mile on the west, and 50 feet per mile upon the east side of the mountain, to be adopted in their stead.

By the New-York and Erie road, the distance to Beaver is estimated at 608 miles. The continuation, however, of the two routes to the Ohio canal, with a view of accommodating the trade and travel of the more central portions of Ohio, with the advantages which that canal will present in relation to the trade of the Ohio valley, during those portions of the year when the river is not naviga-

ble, from the low state of the water, will, by increasing the distance of one in a greater proportion than the other, lessen somewhat the disparity between them.

The New-York and Erie road, from its location, intersecting, as it does, the waters of the Allegany within the limits of New-York, possesses advantages in the transmission of merchandize and other freight westward into that valley, and that of the Ohio below, which will enable it to compete successfully with the more southern routes. This advantage is derived from the descending navigation of the Allegany, by which freight can be transmitted, according to statements which are entitled to credit, from Olean to Pittsburg, at an expense of from \$2.50 to \$3.50 per ton, or to other points lower down on the Ohio river, at rates less in proportion than would be required from Olean to Pittsburg. By this channel, merchandize can be forwarded some weeks earlier in the season than the opening of the Pennsylvania Canals.

As it regards the route from New-York by the way of Baltimore and the Baltimore and Ohio railroad, to the Ohio valley, it will be seen, by referring to the table of distances, &c., that it is less advantageous than the route through Pennsylvania, and does not, therefore, require a more particular notice.

The preceding comparison does not anticipate the aid to be derived from auxiliary lines, so located as to take advantage of the more favorable ground, situated near to, but without the limits of the State. The effect of these lines will be to diminish the actual distance, 18 miles, and the average rise and fall per mile 2 to 3 feet, on each of the several lines from New-York via the New-York and Erie railroad, to Buffalo, and the other points mentioned.

This being so important a difference, and the prospect of those auxiliary lines being eventually constructed so very probable, it would not, it is believed, be safe, in estimating the future importance and relative value of the New-York and Erie route, as a leading thoroughfare between the east and the west, to rest upon any calculations, in which the aid to be derived from those auxiliary lines was not fully anticipated.

A similar remark may, perhaps, with propriety, be made, although possessing less force, in reference to the western portion of the route, via Albany to Buffalo. The route supposed in the comparison is that covered by the charters already granted. Should charters ultimately be obtained, and a line of railway be constructed along the lower and more level ground, in the vicinity of the Erie canal, it would lessen the average rise and fall per mile $1\frac{1}{4}$ feet on that route, and would probably somewhat shorten the distance.

On the subject of the probable cost of transportation upon the New-York and Erie railroad, the most satisfactory information will be derived from the experience upon the Philadelphia and Columbia

railroad, to which I have already had occasion to refer.

The average rise and fall per mile upon that road, is 15 per cent greater than upon the New-York and Erie, supposing the latter to be located upon the most favorable ground.

The maximum grade upon the Philadelphia and Columbia road is 50 feet per mile;* but the general range of the higher grades does not much exceed 30 or 35 feet per mile. Upon the New-York and Erie, under a favorable location, it need not exceed 70, or at most, 80 feet, per mile, and that for a very short distance. The higher grades upon the latter road are concentrated at particular points, and arranged so as to be overcome with the greatest economy. Those exceeding 40 feet per mile, embrace but one ninth part of the whole distance, leaving an extent of more than 400 miles upon which the average rise and fall does not exceed 12 feet per mile.

The Philadelphia and Columbia railroad has also two inclined planes operated by stationary power. Upon the New-York and Erie road, planes will be avoided. The latter is, moreover, the straightest road, having no curvatures of a less radius than 700 feet. Upon the former road, the minimum radius is as low as 500 feet. In proceeding from tide-water westward, the three great valleys, viz: the Delaware, the Susquehanna and the Allegany, through which the line of the New-York and Erie road passes, are elevated, the first 600, the second 850 and the latter 1,300 feet above tide, giving a general inclination to the whole line eastward, favorable to the preponderance in the trade. This feature is an important one in reference to the economy of transportation, upon all that portion of the road lying between the Hudson river and the table land which separates the Allegany from Lake Erie, embracing more than nineteen-twentieths of the whole route, and on which full nineteen-twentieths of the whole business of the road will be conducted.

The expenses of transportation upon the New-York and Erie road, so far as it is influenced by the shape or profile of the road, will, therefore, it is believed, rather fall short than exceed the cost upon the Philadelphia and Columbia road.

Upon the latter road, the gross receipts for the year ending Oct. 31, 1837, including railway and motive power tolls, as per report of superintendent, amount to

\$353,566 38

The total expenditure for the same time including supervision, cost of repairs and maintenance of road, and expense of motive power, together with interest upon cost of engines, as

* The maximum grade, where the Schuylkill plane is avoided by the West Philadelphia branch, will be 56.8 feet per mile.

per report, amounts to **\$198,891 89**

Leaving annual nett income equal to **\$154,674 49**

Upon the Philadelphia and Columbia railroad, there are two inclined planes, the annual saving to the State, as estimated by the superintendent, by avoiding one of which, is \$17,400. For the two in the same proportion, it would amount to \$34,800; which, as there are no inclined planes upon the New-York and Erie road, should be added to the preceding,

34,800 00

Giving a total annual nett income, by avoiding the planes of

\$189,474 49

The New-York and Erie railroad being 5.9 times the length of the Philadelphia and Columbia railroad, the nett annual income, supposing it to be in the same proportion, will amount to **\$1,117,899 42**

The Philadelphia and Columbia railroad has a double track throughout; rails principally of iron, with a stone and wood foundation. The cost of repair & maintenance per mile, for a double track the past year, has been \$750. Supposing the New-York and Erie road to have a timber structure, plated with iron, after the ordinary plan, with the exception of 70 miles of the steeper grades, and that the cost of repairs, upon the portion where timber is used, is \$1,100 per mile, it will be necessary to add to the expenditures, or deduct from the estimated income, \$350 per mile, for $483 - 70 = 413$ miles equal to

\$144,550 00.

Leaving the estimated nett annual income New-York and Erie railroad, **\$973,349 42.**

The total cost of grading, masonry and bridging, for a double track, and superstructure for a single track, including clearing, grubbing, fencing, &c. of 483 miles the New-York and Erie railroad, according to the engineer's report of the State survey, which is the only estimate yet made of the whole line, amounts to, allowing 10 per cent for contingencies, **\$4,762,260 00.**

Carried forward \$

To which, add extra expense of iron rails, on 70 miles of steeper grade, 350,000 00

\$5,112,260 00

Adding to this 25 per cent for advance in prices, superintendence, &c., 1,278,065 00

Gives for total cost of road, with single track, \$6,390,325 00

Adding for the second track, in the same proportion, in order to compare with the Philadelphia and Columbia road, gives a total of \$8,880,575 00

To which, if the annual income, as obtained above, is applied, there results an annual dividend of nearly 11 per cent.

If the proceeds of the sale of land donations to aid in the construction of the road, be applied to diminish the amount of capital paid in, the annual dividends will be increased in a corresponding degree beyond the amount estimated.

In the preceding calculations, no allowance is made for the greater economy with which the transportation can be conducted upon a long line of road in proportion than a short one, which, upon two roads, differing as much in length as those under consideration, will undoubtedly have an important bearing upon the expenditures.

It should be recollected that upon the Philadelphia and Columbia railroad, the state has nothing to do with the business of transportation, except to furnish the motive power. In addition therefore to the profits made by the State, there are other profits accruing to the forwarders, which in the case of the New-York and Erie railroad, under the same charges and amount of business, would serve to swell the income derived from the road beyond the amount estimated. It is proper also to remark that the State, furnishing as it does nothing but the motive power in the business of conveyance, is under the necessity of providing that power to suit the convenience of forwarders. Hence it happens, oftener than would otherwise be the case, that the engines are not fully loaded, occasioning a greater loss in this respect than would be experienced by a company having the entire control of the road and of the transportation.

It will be perceived from the above, that the New-York and Erie railroad company will be enabled with the same amount of business as is now done upon the Philadelphia and Columbia road, to reduce materially the charges for transportation below what they now are upon that road, and still make a handsome dividend upon the capital invested. If I am correct also in the views taken in another part of this communication, a still farther reduction in the cost of transportation may be expected eventu-

ally to take place, from an increase in business over and above what is now being done upon the Philadelphia and Columbia road.

The prominent position which the New-York and Erie Railroad will occupy as a great thoroughfare between the east and the west, will enable it to participate largely in the growing trade and increasing travel of the country. Its location likewise through a region of country which admits of no rival route in its immediate vicinity, and the important connexions to be formed by it with other lines of communication which must to a considerable extent be tributary to it, give to it advantages which will contribute largely to its importance as a public work.

On the north it connects with the Chenango and Chemung canals, and the Ithaca and Owego railroad, and on the south the Delaware and Hudson and Lackawaxen canals, all of which are completed and in operation. On the south also it connects with the Pennsylvanian north branch canal, and the Blossburgh and Painted-Post railroad, and upon the north with the Genesee valley canal, all of which are in a course of construction, and will soon be completed and in operation. It will connect also on the north with several contemplated railroads, one leading from Orange county to Catskill, another to Utica, a third to Syracuse, a fourth to Rochester, and a fifth to Buffalo; and on the south it will receive as tributaries the proposed Delaware and Hudson, Lackawana and Great Bend, and Williamsport and Elmira railroads; and will form likewise a connexion with the Alleghany river, which, with the aid of the contemplated improvements, and the advantages presented by the descending navigation in that river, will secure to it in a great measure the trade and travel of the Alleghany valley. By means also of the contemplated Ithaca and Auburn railroad, and the steamboat navigation upon the Seneca and Cayuga lakes, and the line of railway from Auburn to Buffalo, a direct communication will be opened with the rich and flourishing counties in that portion of the State. The interest taken by these counties in the New York and Erie railroad, it may reasonably be presumed, will continue to increase in proportion as its beneficial effects, in affording a continuous line of railway to the city of New York, available at all seasons, and its advantages as a rival route in suppressing monopolies upon other lines, are better understood.

The number of branch lines of communication which are either now, or will soon be in operation, gives to the New York and Erie railroad, in ensuring to it an early increase of business, peculiar advantages, which are not possessed by most other main lines of communication.

In the conveyance of freight, the road will find permanent sources of business, in the connexions to be formed with the

inexhaustible anthracite coal fields of Lackawana valley, and with the bituminous coal strata, that are known to extend through the northern counties of Pennsylvania, from the Susquehannah to the Alleghany.

It will also find a constant and profitable source of business in the transportation of lumber, with which large portions of the country through which the road passes, abounds, and which, from the waters of the Susquehannah to Lake Erie, includes the finest timber region within the limits of the State.

Salt and plaster, from the central, or northern portions of the State, will be distributed along the line of the road, and the agricultural and other productions of the range of counties on either side, from the Hudson to Lake Erie will be, to a considerable extent, tributary to it.

Adapted as railroads pecuniary are, to the transportation of passengers, it is an important fact, and of itself conclusive, in relation to the future value of the road, that the aggregate population of the counties, which will naturally be tributary to it in the States of New York and Pennsylvania, when all the branch lines connecting with it are formed, falls only about one-fifth short of the population in the counties tributary to the main line of railroad from Albany to Buffalo, and is now increasing in a more rapid ratio than the population of the latter counties.* In this estimate the population of New York city and the cities and villages upon the Hudson, is not included. If, however, a fair proportion of the latter be added, as, also, that portion of the travel between New England and the west, which usually passes New York city in its course, and which, in consequence, would most naturally pursue this route, and there can be no doubt but the business will, in a very short time from the period of the opening of the road, be sufficiently ample to sustain it.

By an examination of the map, it will be seen that the New York and Erie railroad occupies middle ground between the main line of communication from Albany to Buffalo, on the north, and the Pennsylvania improvements on the south. In its course west, it avoids the main range of the Alleghany mountains, which enter the State of New York much diminished in elevation, losing, in consequence, much of their formidable character. It is probably the most direct course for a continuous line of railway communication from the city of New York to the northern portions of Ohio, Indiana, &c., thus penetrating to the heart of the most fertile portion of the Mississippi valley; and as such, was first advocated and brought into notice as a great public improvement.

From the surveys and examinations which have since been made, and facts developed, it has lost none of its importance, but has been daily acquiring more consequence in the estimation of the pub-

*See table annexed.

lic. It is evidently destined to become a great national thoroughfare, and as such is especially entitled to the attention and patronage of the State.

To the city of New York in particular, it assumes an importance second only in its anticipated influence upon its commercial prosperity to the Erie canal. While other cities upon the seaboard, Boston, Philadelphia and Baltimore, have opened to themselves railway communications, extending into the interior, by which supplies of provisions, fuel, &c., can be procured at all seasons, New York is as yet unprovided with any such communication.

From the period of the closing of the canals to the opening of navigation in the spring, embracing more than one-third of the year, she is dependent mainly for her supplies upon the accumulations during the seasons of navigation, and the contributions of the adjacent country, which are usually reserved to the period when they will command the highest prices.

The opening of a continuous line of railway, leading into the fertile regions of the interior, will remedy, to a very considerable extent, this evil, and serve to prevent the existence of those monopolies which so easily spring up under the present limited sources of supply, and which will continue to be more severely felt in proportion as the population of the city and the adjacent country is augmented.

In conclusion, I will add, that this great interest possessed by the city of New York in the construction of the New York and Erie railroad, necessarily induces a reciprocal interest on the part of those portions of the interior of the State which are so situated as to be able to avail themselves of the road when constructed. The benefits accruing to those portions, in being able to communicate with the city at all seasons, with the great additional value which the road will impart to lands and other property wherever its influence shall be felt, cannot, from their magnitude, be easily calculated. As a public enterprise, in this view alone, it will richly repay to the people of the State of New York any favors it may be so fortunate as to receive at their hands in aid of its construction.

Respectfully submitted,

EDWIN F. JOHNSON, *Civil Engineer.*
Albany, January, 1838.

COMPARATIVE STATEMENT of the population of the counties situated between the Hudson River and Lake Erie, tributary respectively to the two lines of railway; one extending from Albany to Buffalo, and the other from New York through the southern tier of counties to Dunkirk.

NEW YORK AND ERIE RAILROAD.

Counties.	Population in 1830.	Population in 1835.
Chautauque,	34,671	44,869
Cataugus,	16,724	24,996
One-fourth of Erie,	8,930	14,398
One-fourth of Genesee,	13,037	14,647

Allegany,	26,276	35,214
One-fourth of Livingston,	6,930	7,773
Steuben,	33,851	41,435
One-fourth of Ontario,	10,042	10,217
One-half of Yates,	9,504	9,898
One-fourth of Seneca,	5,260	5,656
One-fourth of Cayuga,	11,987	12,302
Tompkins,	36,545	38,008
Chemung,		17,465
Tioga,	27,690	16,535
Cortland,	23,791	24,168
Broome,	17,579	20,190
Chenango,	37,238	40,762
Three-fourths of Delaware,	24,768	25,644
One-half of Otsego,	25,686	25,214
Sullivan,	12,364	13,755
Two-thirds of Orange,	30,244	30,064
Total in New York,	413,017	473,199
Add for counties in Pennsylvania,	92,795	107,000
	505,812	580,199

Increase from 1830 to 1835, is $14\frac{7}{10}$ per cent.

ALBANY TO BUFFALO.

Counties.	Population in 1830.	Population in 1835.
Three-fourths of Erie,	26,789	43,196
Niagara,	18,485	26,490
Three-fourths of Genesee,	39,110	43,941
Orleans,	18,773	22,893
Three-fourths of Livingston,	20,789	23,319
Monroe,	49,862	58,085
Three-fourths of Ontario,	30,125	30,653
Wayne,	33,643	37,788
One-half of Yates,	9,504	9,898
Three-fourths of Seneca,	15,781	16,970
Three-fourths of Cayuga,	35,961	36,900
Onondaga,	58,974	60,908
Oswego,	27,104	38,245
Madison,	39,037	41,741
Oneida,	71,326	77,518
Jefferson,	48,515	53,088
Lewis,	14,958	16,093
Herkimer,	35,869	36,201
Montgomery,	43,595	46,705
One-fourth of Otsego,	12,843	12,607
Schenectady,	12,347	16,238
	663,390	749,477

Increase, from 1830 to 1835, is 13 per cent.

WESTERN AND ATLANTIC RAILROAD.

The interesting event of breaking ground in this magnificent enterprise, was celebrated on the 1st of January. One of the contractors, Mr. Neleigh, had arrived a few days previously, and Gen. Brisbane, then in command, in consequence of the absence of Col. Long, with characteristic energy, determined that the work should open with the new year. Accordingly, on the first day of January, 1838, the citizens of the neighborhood were assembled on the very summit of the Blue Ridge, and the laborers, with

barrows, carts, picks, and spades, prepared to attack this mountain barrier to the west at its topmost elevation. The 1st and 3d brigades of the corps of engineers, were also in attendance; and on the bosom of the Allatoona heights, for the first time, was assembled, a portion of the privileged few about to divide the honor of levelling the rugged obstacles of nature, opposed to the moral and commercial advancement of mankind. All seemed impressed with the solemn dignity of the occasion, and every heart responded to the animated eloquence that now echoed through the hills—sensible that the very paucity of their numbers only increased the share of honor to each participator.

Before the turning of the first sod, Gen. Brisbane, who had been requested to address the assembly, commenced his subject by congratulating them, that although vanity as well as pride, was usually enlisted upon similar occasions, the nobler sentiment would, in the present instance, require no aid of the lesser. A recurrence to difficulties already encountered—a glance at obstacles still crowded around—a single appeal to that spirit of enterprise which had, from the lofty summit of the Alleghenies, dared to grapple by one stroke of policy, the interests of a continent immeasurably broad, inexhaustibly fertile, and incalculably populous, would, of itself, afford a sufficient guarantee for the favor with which the celebration of the day would be entered upon. He observed, that, in the remote ages of the world, this service would have been offered to some heathen god, as a propitiation for his favor. That at a more recent date, we should have felt through the pomp and circumstances of the occasion, the august powers of some principal potentate. But that, in our own glorious day, we establish, by these ceremonies, the epochs merely of our historic eras.

It was his duty, he said, to exhibit, through the various objects, the character and the previous story of the work before us—its claim to a prominent page, not only on the records of America, but upon those of the world. He regarded it as revolutionary of the whole political, social, and commercial character of society.

On the first day of 1836, an act of the General Assembly of Georgia was published, declaring her interested in the then contemplated road to Cincinnati. At a convention of delegates held at Knoxville, East Tennessee, on the 4th of July, following, the Georgia representation, from the reports of her engineers, and the negotiations of her statesmen, discovered that while her position resembled that of New York, as to her domestic improvements, her intercourse with the west could be reduced to the most accurate and satisfactory calculations—the exports of Cincinnati being deliverable at the western terminus of her road upon the Tennessee river, with the additional expense of railroad transportation

to the sea-board, at a more reasonable cost than the trade from the same place to New York—the southern markets for the sale of these exports, being excluded in the estimate. The result of these conclusions, was a convention of the state; and on the first day of 1837, an act to survey, locate and construct, a railroad, to be an exclusive state work, was published by the Legislature.

On the 4th of July following, a twelve month from the discussion of the policy at Knoxville, the whole was put under survey; and to-day, the first of 1838, two years from the earliest legislation on the subject, more than a million of the surplus revenue of the state is enlisted in the actual construction of the work. Nor is this all, he exclaimed turning to the engineer department already had the influence of practical knowledge shed its rich lights upon the different interests of the people, their opinions were as sensibly modified. In 1825, Dr. Fort of Mulledgeville, introduced into the Legislature of the state, a bill, purporting objects similar to the present enterprise—'tis true, he said the bill had become a law, and the subject entered upon; but for the want of support on the part of public opinion, had been suffered to decline. At the present day, he was happy to say, no such thing could be. In the college of this state, a professorship of practical science had been established, and among the corps present, we not only found the sons of Georgia's most distinguished citizens, but the graduates of her classic institution, were ambitious to take part in the actual operations of the field. He observed, that the high prerogatives of the southern ancestry had been ere this most woefully curtailed; and yet, while the whole world was engaged in extending the principles of science to the minutest application of labor, our southern youths were ushered into active life, with the same closet love that constituted the power of the high priest of some heathen temple. He finished his address, by calling upon all present to exert their influence in whatever sphere, upon a principle of duty—that from our distinguished chief to the least operatives on the work, a spirit of subordination and diligence should actuate us in the fulfilment of our respective functions. He trusted that a high-toned confidence in each other, would altogether dispense with that contemptible habit of insolent control, which was so utterly inconsistent with the spirit of our institutions. He himself never had occasion to issue an order, although often exposed to the most appalling contingencies. He felt a sympathy, he declared, which satisfied him, that the enthusiasm of the day would, of itself, engraft upon each, the proud resolve, "to dare to do," and the people of Georgia, although anxiously intent upon the progress of their undertaking, would still discover in them an energy altogether equal to the success of the enterprise.—*Washington (Ga.) Spy.*

From the Grand River Times.
GRAND RIVER COUNTRY.

Almost the entire Grand River country lies south of the 43d degree of latitude, south of the line of the Erie Canal, and is as much warmer than the country bordering upon the Atlantic coast in the same latitude, as is the valley of the Mississippi. It is not subject to severe frosts or heavy snows. During the last winter the snow fell to the depth of 18 inches, and we are informed by a gentleman who has been engaged in the Indian trade for nearly twenty years, that he never knew it as deep before. During the coldest days the thermometer sunk to zero, while in Albany, if we recollect, it was more than 20 below. The frost of August, 1836, that so destroyed corn throughout the whole country, was no more severe here, than it was 100 miles south.

During the present winter we have not had more than four or five inches of snow, and since New Year none at all. The weather has been uncommonly warm, and farmers have been ploughing since this month commenced.

We subjoin for the gratification of the curious, a statement of the temperature as taken from a thermometer record, kept by a gentleman of this place. The time of observation was 10 o'clock, A.M.

We commence with January 3.

	Jan. 3.	Jan. 7.	Jan. 15
Sunday,		38	39
Monday,		25	40
Tuesday,		22	45
Wednesday,	70	13	41
Thursday,	57	58	34
Friday,	32	30	25
Saturday,	40	39	17

There being few marshes and little stagnant water, the air is free from that miasma to which some sections of the country is subject, consequently there is little sickness of any kind, as little as in any part of the western country.

The soil is generally rich, producing a magnificent growth of timber, and is finely adapted for the growth of wheat, corn, oats, and the grasses. There are but few prairies, and those are mostly at the mouths of important tributaries of the Grand River, as the Maple, Flat, Thorn Apple and Rouge rivers. These, however, are unsurpassed in richness and beauty. The western part of Clinton is mostly timbered land of the first character, and we venture to say, there is no part of Michigan that is better fitted for a rich agricultural region than this. There are no marshes, no ponds, no waste lands, and the numerous running streams with which it abounds, and its immediate vicinity to navigable waters, gives it advantages that are not and should not be overlooked. The Maple and Looking-glass rivers, and Stony Creek, are the most important streams in this section.

The eastern part of Ionia, bordering on Maple and Grand rivers, presents some of the finest tracts of "openings" that we have seen in the State. The

soil is good as can be, as its appearance and its products alike testify.

As you descend Grand River you find more "oak openings," as in that part of Kent county lying east of the Thorn Apple, and the soil is more light but produces good wheat, as well as grass. That part lying west of the Thorn Apple and south of Grand river, is mostly timbered land, producing fine growth of black walnut, white wood, sugar maple, &c. That part of Kent county lying north of Grand river, (as yet unsold) presents one of the finest tracts of farming land that we have any where seen, and numerous and fast increasing settlements upon it, show that we are not alone in believing it so.

The eastern part of Ottawa county is of the same character, possessed of a fine soil and is well watered. The southern and western part is principally valuable for its pine timber which is found in great abundance, and of an excellent quality. As a whole, we are confident that no section of the State presents stronger inducements to the agriculturist, than Grand river country. Although it has not the inviting prairies of the southern section of the State, its rich and durable soil, its freedom from marshes and ponds, and the thousand clear and rapid brooklets that every where meet the observer's eye, gives it at least equal advantages.

CHICAGO AND NEW YORK UNITED BY INTERNAL IMPROVEMENTS.

By the report and estimates of J. D. Allen, Esq., it is estimated by calculating Railroad speed at 17, and steamboat at 12 miles an hour, that the transportation of passengers can be effected, from New York via Albany, Utica, Oswego, &c., to Chicago, in sixty-one and a half hours, thus:

Distance and Time.

From N. Y. to Albany, 150 miles, by night boat,	10½ hours
" Albany to Oswego, 168 miles, by day Railroad,	10 "
" Oswego to Hamilton 160 miles, by night boat,	13½ "
" Hamilton to Detroit 191 miles, or to Huron, 136 miles, by day Railroad,	11 "
" Detroit to Chicago, and from Huron to Chicago, 250 miles, by day and night Railroad & steamboat,	16½ "
Total	61½ "

From Boston—time the same.

The report adds: "In a further time of ten hours, the traveller may reach the Mississippi, or some of its chief tributaries, in less time, and may complete the journey by the river to New Orleans, within eight days from his departure from the city of New York, or from Boston," and this too, without losing a meal, or a night's rest.—*Chicago Democrat.*

VALUABLE DISCOVERY.

The Richmond Enquirer of Thursday says: "There seems to be no end to the mineral treasures of Virginia. Yesterday we heard of another discovery, which, according to present appearances, is destined to prove of incalculable service."

The reader will recollect that during last autumn we spoke of a rich vein of iron ore, which was in a course of exploration, on the south side of James river, near the coal pits, and from two to three miles of the river. The ore has been further opened, and we are happy to learn promises to be of great value. It is under the auspices of John Heth, Esq., and is immediately on the new Railroad, which will soon be opened, from the coal pits to the river. But the discovery embraces a new object—a large rich bed of natural Coke, which is just below the iron ore, and is suspected of being in a large field, and of being near 17 feet thick.

The coke was first discovered by those who are engaged in laying down the Railroad. They thought of burning it as fuel, and the experiment has answered.

It is said that Professor Rogers has pronounced it natural coke—and we understand that Mr. Deane is about to try its virtues in his iron rolling mill.

Should it correspond with the indications which have so far transpired, it will prove a source of great wealth to its worthy, liberal and enterprising proprietor, as well as advantage to the rising manufactures of Richmond."

WHISHAW'S HYDRAULIC TELEGRAPH.

We have long ago heard it suggested, and we think by Mr. Vallance, that a column of water could be conveniently employed to transmit information. Mr. Francis Whishaw has conveyed a column of water through sixty yards of pipe in the most convoluted form, and the two ends of the column being on a level, motion is no sooner given to one end than it is communicated through the whole sixty yards to the other end of the column. No perceptible interval elapses between the time of impressing motion on one end of the column and communicating it to the other. To each end of a column he attaches a float board with an index, and depression of any given number of figures on one index, will be immediately followed by a corresponding rise of the float board and index at the other end. It is supposed that this simple longitudinal motion can be made to convey all kinds of information. It appears to us that the amount of information which can be conveyed by the motion in one direction only, of the water, or backward and forward, must be limited. To make the mere motion backwards and forwards of a float board, indicated on a graduated index, convey a great number of words or letters, is the difficulty to be overcome. Mr. Whishaw has exerted his ingenuity in this way, with a promise of success, and by-and-

bye, the hydraulic telegraph may supersede the semaphore and the galvanic telegraph.—*Courier*.

NEW YORK CANAL TOLLS.

The following table shows the annual amount of receipts for tolls on the New York, Erie and Champlain Canals, and also the total receipts on all the New York State Canals, from January 1st, 1820, to January 1st, 1838.

Note.—In the total amount is included the receipts on the Erie, Champlain, Oswego, Cayuga, Seneca, Chemung, Crooked Lake and Chenango canals.—The tabular statement is from the Journal of Commerce.

Years.	Erie & Champlain canal,	Total receipts.
1820	5,437 34	5,437 34
1821	14,388 47	14,388 47
1822	64,072 40	64,072 40
1823	152,958 33	152,958 33
1824	340,761 07	340,761 07
1825	566,112 97	566,112 97
1826	762,003 69	762,003 69
1827	859,058 48	859,058 48
1828	835,407 28	838,444 69
1829	795,054 52	813,137 45
1830	1,032,599 13	1,056,922 12
1831	1,194,610 49	1,223,801 98
1832	1,195,804 23	1,229,483 47
1833	1,422,695 22	1,463,715 22
1834	1,294,649 66	1,339,799 56
1835	1,492,811 59	1,548,972 39
1836	1,556,269 37	1,614,680 38
1837	1,239,052 49	1,292,129 80

\$14,823,746 64 \$15,191,879 68

ANOTHER EVIDENCE OF THE WEALTH OF N. CAROLINA.

It was stated in this paper a few months ago, that a lot of copper had been sent here from Guilford county, on its way to New York, to be tested in quality—the mine having been then recently discovered. We understand that the test was highly satisfactory, showing the metal to be of a superior kind, and that a quantity of the same has been shipped from this port to England.—*Wilmington Advertiser*.

ECONOMY OF LABOR.

One great superiority of the manufacturers of England over the agriculturists, is attributable to their attention to the economy of labor. In my earliest remembrance, the farmers were too ignorant to think of it, afterwards they were too prosperous, and now they are too much bent on seeking relief from other sources than their own energies. What might be done in time by a combination of mechanical and chemical science, it is as impossible to calculate beforehand, as it would have been fifty years since to have foretold what would be the present state of spinning, weaving, bleaching, and transport.—*Walker's Original*.

For Sale.—A Level, made to order by Brown & Hunt, and in first rate order. Enquire at this office.

Volume Six will be completed as speedily as possible. The next, or Volume for 1839, will be published in a more convenient form for preservation.

Subscribers who desire to be supplied with missing numbers, will do well to apply for them soon. We shall always take pleasure in furnishing them if we have them to spare.

Particular attention will be given to the procuring of all kinds of Instruments required by Engineers.—Orders must be accompanied with the necessary funds or city acceptances.

Wanted on a Lease.—A good country place, with suitable out-houses, and from 5 to 15 acres of land, a short distance of the city. Enquire at this office.

FRAME BRIDGES AGAIN.

The subscriber will build Frame Bridges in any part of the United States, Maryland not excepted, and will extend them to as long a span, and warrant them to be as strong, durable, and cheap as those made by any other method.

Having no patent right, he requires no agents. A large number of bridges of his construction are to be seen. Young gentlemen, who wish, can be instructed in the true mathematical principles of building bridges, and the application of the same to practice. JOHN JOHNSON. Burlington, Vt., Jan. 1838. F14tf

NOTICE TO CONTRACTORS.

Sealed proposals will be received by the undersigned, Acting Commissioner of Public Works, for the 5th Judicial Circuit, Illinois, at his office in Canton, Fulton county, on Tuesday, the 17th day of April next, until 4 o'clock, P. M. of that day, for the Grading, Bridging and Masonry of twenty-four miles of the Peoria and Warsaw Railroad; extending from Peoria, on the Illinois river, twelve miles west and from Warsaw on the Mississippi, twelve miles east.

Sealed proposals will also be received at the Engineer's office, in Quincy, Adams county, Illinois, on Monday the 23d day of April next, until 4 o'clock P. M. of that day, for the grading, bridging and masonry, of the Northern Cross Railroad, extending from Quincy to Columbus.

Plan and profiles, together with specifications of the manner of executing the work, will be exhibited at each office ten days previous to the days of letting. The portions of the above work to be put under contract are expensive, requiring a large amount of heavy excavation and embankment. They will be divided into sections of about one mile in length.

Contractors will be required to make an efficient commencement of their respective jobs within sixty days after the letting, and to have them fully completed on or before the first day of August, 1839.

Recommendations will be expected in all cases in which the contractor is not personally known to the undersigned, or the associate commissioner attending the letting.

The country is dry, healthy, and well settled; provisions are easily procured, and as the above with the other works recently let, and now offered by the different commissioners of the State to be let next spring, are the commencement of the extensive system of Internal Improvements projected by the State of Illinois, it is worthy of the attention of contractors abroad. J. WRIGHT,

Acting Commissioner, 5th Judicial Circuit, Canton, Illinois, Jan. 9, 1838.

AGENCY.

The Subscriber offers his services as Agent, to procure Machinery for Mills, Steam Engines, Locomotives, Printing Machines, Presses, Types and Fixtures.

He will give prompt attention to all orders entrusted to him for execution; and pledges himself to those who may employ him, that no effort on his part shall be wanting to procure the best articles to be had in the city—and to give satisfaction.

He will also employ Millwrights and Engineers, to erect Mills, and put the Engines and Machinery in operation.

Orders accompanied with the necessary funds, or satisfactory city acceptances, should be addressed to D. K. MINOR, 30 Wall-st. N.Y.

LOUISVILLE, CINCINNATI, AND CHARLESTON RAILROAD.

NOTICE TO CONTRACTORS.—Sealed Proposals will be received at the Office of the Company in Columbia, S. C., until the 15th day of February next, for the graduation and masonry of that portion of the Road from Columbia to the crossing of the Congaree River, in the vicinity of McCord's Ferry, being 25 miles in extent.

Also, for the construction of a Bridge of 400 feet in length, on the Congaree River, to be built on stone piers and abutments, for which there are suitable quarries in the neighborhood.

The plans and profiles of the line will be ready for inspection at the Office of the Resident Engineer, in Columbia, S. C., after the 10th day of February.

So soon as the surveys for location, now in progress, are completed, that part of the Road extending from McCord's Ferry to the Charleston and Hamburg Railroad, at Branchville, will be put under contract, of which due notice will be given.

WM. GIBBS Mc NEILL,
Chief Engineer.

The Railroad Journal, N. Y. Courier & Enquirer, N. York; Providence Journal, Providence, R. I.; Atlas, Boston; Philadelphia Enquirer, Philadelphia; will publish the above notice 6 times, send a copy of the paper to the Office in Charleston, S. C., and a certified copy of their account for payment

Jan. 12

fmw6

NEW ARRANGEMENT.

ROPE FOR INCLINED PLANES OF RAILROADS.

WE the subscribers have formed a co-partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S. Durfee & Co., will be done by the new firm, the same superintendent and machinery are employed by the new firm that were employed by S. S. Durfee & Co. All orders will be properly attended to, and ropes will be shipped to any port in the United States.

12th month, 12th, 1836. Hudson, Columbia County, State of New-York.

ROBT. C. FOLGER.
GEORGE COLEMAN.

AMES' CELEBRATED SHOVELS, SPADES, &c.

300 dozens Ames' superior back-strap shovels.
150 do. do. do. plain do.
150 do. do. do. cast-steel Shovels & Spades
150 do. do. do. Gold-mining Shovels
50 do. do. do. plated Spades.
50 do. do. do. socket Shovels and Spades
Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed), manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.
No. 2 Liberty street, New-York.
BACKUS, AMES & CO.
No. 8 State-street, Albany.

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined iron, v4-tf

MACHINE WORKS OF ROGERS,

KETCHUM AND GROSVENOR, Paterson, New-Jersey. The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of cast iron, from a variety of patterns, and Chills; Car Wheels of cast iron, with wrought Tires; Axles of best American refined iron; Springs; Boxes and Bolts for Cars.

COTTON, WOOL, & FLAX MACHINERY.—Of all descriptions and of the most improved patterns, Style, and Workmanship.

Mill Geering and Millwright work generally; Hydraulic and other Presses; Press Screws; Callenders; Lathes and Tools of all kinds; Iron and Brass Castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Paterson, N. J. or 60 Wall-st. New-York 51tf

FRAME BRIDGES.

THE undersigned, General Agent of Col. S. H. LONG, to build Bridges, or vend the right to others to build on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish all materials for superstructures of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington; two miles from the former place. Across the Motawamkeag river on the Military road in Maine. On the national road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Paterson Railroad in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contocook river at Henniker, N. H. Across the Souhegan river, at Milford, N. H. Across the Connecticut river, at Hancoc, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesee river, at Squakiehill, Mount Morris, N. Y. Across the White River, at Hartford, Vt. Across the Connecticut River at Lebanon, N. H. Across the mouth of the Broken Straw Creek, Penn. Across the mouth of the Cataragus Creek, N. Y. A Railroad Bridge diagonally across the Erie Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 500 feet in length; one of the spans is over 200 feet. It is probably the firmest wooden bridge ever built in America.

Notwithstanding his pre-set engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms.

MOSES LONG,
Rochester, Jan. 19th, 1837. 4-y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,

No. 264 Elizabeth street, near Bleeker street, NEW-YORK.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on the New-York and Harlaem Railroad, now in operation.

ROACH & WARNER,

Manufacturers of OPTICAL, MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS, 293 Broadway, New-York, will keep constantly on hand a large and general assortment of Instruments in their line.

Wholesale Dealers and Country Merchants supplied with SURVEYING COMPASSES, BAROMETERS, THERMOMETERS, &c. &c. of their own manufacture, warranted accurate, and at lower prices than can be had at any other establishment.

† Instruments made to order and repaired, ly-14

RAILWAY IRON, LOCOMOTIVES, &c. &c.

THE subscribers offer the following articles for sale:—

Railway Iron, flat bars, with countersunk holes and mitred joints,

350 tons 2by, 15 ft in length, weighing 11 1/2 cwt

280 " 2 " 1, " " " 3 1/2 " "

70 " 1 1/2 " 1, " " " 2 1/2 " "

80 " 1 1/2 " 1, " " " 1 1/2 " "

90 " 1 " 1, " " " 1 " "

with Spikes and Splicing Plates adapted thereto To be sold free of duty to State governments, or incorporated companies.

Orders for Pennsylvania Boiler Iron executed. Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2 1/2, 3, 3 1/2, 3 3/4, 3 1/2, and 3 3/4 inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand Wax.

Also, Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

A highly respectable American Engineer resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron, &c. ordered through us.

A. & G. RALSTEN & CO.,
Philadelphia, No. 4 South Front-st.

28 tf

ARCHIMEDES WORKS.

(100 North Moore-street, N.Y.)

THE undersigned beg leave to inform the proprietors of Rail Roads, that they are prepared to furnish all kinds of Machinery for Rail Roads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Rail Road, none of which have failed.—Castings of all kinds, Wheels, Axles and Boxes, furnished at the shortest notice.

H. R. DUNHAM & CO.
NEW YORK, February 12th, 1836. 4-ytf

PATENT RAILROAD, SHIP AND BOAT SPIKES.

*. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent) are found superior to any yet ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above-named factory—for which purpose they are found invaluable, as their adhesion is more than double any common Spikes made by the hammer.

*. All orders directed to the Agent, Troy, N.Y. will be punctually attended to.

HENRY BURDEN, Agent.
Troy, N.Y., July, 1831.

*. Spikes are kept for sale, at factory prices, by I & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water-street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1J23am H. BURDEN.

G. Mitchell, Printer, 265 Bowery, N.Y